

REMARKS

In Paragraph 1 of the Office Action dated February 10, 2009, claims 1-6 and 19-23 were withdrawn from consideration as being drawn to non-elected inventions. Applicant confirms this election and cancels claims 1-6 and 19-23.

In Paragraph 2, the Examiner indicated that the references referred to in the information disclosure statement (IDS) filed on 08/16/2006 were not considered. Applicant submitted the IDS to insure that the Examiner was aware of the International Search Report that was issued in connection with this US National Stage application. In accordance with MPEP 1893.03(g), applicant was under the impression that the Examiner would consider the references in the International Search Report without further action by applicant. In order to insure that the references cited in the International Search Report are considered by the Examiner, applicant submits a replacement IDS in which the references cited in the International Search Report are listed. In case copies of the references are not in the US National Stage file, applicant also includes copies of the non-US patent references.

In Paragraphs 3-4 of the Office Action, claims 7-18 were rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Applicant amends claim 7 to remove “and/or” and, in addition, applicant has removed other language that might confusingly indicate that the resin component is independent from the porous body.

In Paragraphs 5-6 of the Office Action, claims 7-18 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicant amends the claims so that the preamble no longer includes the confusing reference to a “resin composition”. Instead, the claims require that the claimed invention is a “composite material”

comprising a porous body, a resin component and a curative component. Support for use of the term “composite material” is found in the third line of Paragraph 2 of applicant’s specification. In addition, new claims 24-30 have been added to more particularly point out the invention.

In Paragraphs 8-9 of the Office, claims 7 and 9 were rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Creighton et al. Applicant has amended claim 7 to more particularly point out that the invention is directed to a composite material that includes a porous body, an uncured resin component and a curative component. The uncured resin component is made up of a liquid thermosetting resin in which solid particles of thermosetting resin are dispersed. A sufficient amount of a gelator is also included in order to maintain the uncured resin component in a high viscosity state, so that the solid resin particles remain suspended in the liquid resin. As a feature of the invention, the viscosity of the uncured resin component changes from the high viscosity state to a low viscosity state when the temperature is increased from ambient temperature to the curing temperature. The low viscosity state is substantially less viscous than the high viscosity state, so that the resin can flow throughout the porous body and into contact with the curing agent (See Paragraph 11 of applicant’s specification).

Creighton et al. is directed to film adhesives that are substantially different from applicant’s claimed composite material. In order to form the film adhesive, Creighton et al. requires that an uncured liquid thermosettable resin first be applied to a sheet of carrier material to form a tacky coating (Col. 4, lines 41-49). The liquid resin preferably cures at room temperature (Col. 2, lines 49-51). Particles of uncured resin adhesive are then applied to the tacky coating of uncured liquid resin (Col. 4, lines 49-54). Importantly, the particles of uncured solid adhesive must have a curing temperature that is at least 30°C higher than the curing temperature of the liquid resin.

Creighton et al. specifically requires that the liquid resin be converted into a hard, thermoset product while the solid particles remain in a curable state (Col. 4, lines 54-56). Creighton et al. defines a thermoset product or composition as the cured, cross-linked, infusible product obtained by curing a thermosettable resin composition (Col. 2, lines 43-45). Accordingly, Creighton et al. teaches the formation an adhesive where one part of the resin component is hard and completely cured and the other part is solid, but still curable. See Example 1 of Creighton et al. where the liquid (urethane) resin is cured within 24 hours at room temperature, but the solid (epoxide) resin remains curable for over 6 months.

Creighton et al.'s adhesive is substantially different from applicant's composite material in both form, content and function. Applicant's invention requires that both thermosetting resins in the resin component remain uncured and that a gelator be used to insure that the solid resin particles remain dispersed in the liquid resin. Creighton et al. requires that the liquid resin be completely cured to form a hard layer to which the solid uncured adhesive particles are attached. A major advantage provided by Creighton et al. is that the solid uncured adhesive particles are held securely in place on the cured resin film during both storage and use as an adhesive. This is substantially different from applicant's invention where both the liquid and solid resins remain in the form of an uncured random dispersion with the solid particles not being securely attached to anything.

Applicant's invention requires that the uncured resin component change from its high viscosity state during storage to a low viscosity state during the curing process. This reduction in viscosity insures that the entire resin component flows within the porous body. Creighton et al. is substantially different in that the hard, cross-linked and cured resin film remains solid and does not flow anywhere during the curing process.

In Paragraph 10 of the Office Action, claims 10-12 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Creighton et al. as applied to claim 7 and further in view of JP 57-167373. JP 57-16373 teaches the conventional combination of an uncured resin adhesive with a fiber tape to form an adhesive tape. Creighton et al. is similar, except that it teaches replacing the fiber tape with a solid tape that is formed by curing a liquid resin. Instead of attaching the adhesive to a fiber tape, as in JP 57-16373, Creighton et al. attaches the solid adhesive to a tacky liquid resin. The liquid resin is then cured to form the solid tape support to which solid adhesive particles remain attached.

Creighton et al. teaches away from applicant's invention because it requires that the uncured solid adhesive particles be immobilized on a solid cured resin tape. This insures that the solid adhesive particles remain in place when the tape is used to bond two surfaces together. Applicant's invention requires that solid resin particles be randomly suspended or dispersed in an uncured liquid resin. Upon curing, the suspension is converted to a low viscosity state where the two resins can flow randomly. This type of flow is simply not possible with the system of Creighton et al. where the adhesive resin particles are securely attached to a cured resin film.

In applicant's invention, curing of the liquid and solid resins takes place at the same time and at the same temperature. It is further necessary that the total mixture containing both resins be converted to a low viscosity state to insure that the resins flow throughout the porous body. This is substantially different from Creighton et al. where the liquid resin is first cured to form a solid (non-flowing) film, which is used to support adhesive particles that are cured at a later time as part of an adhesive process. The initial selective curing of the liquid resin as taught by Creighton et al. is only possible because the solid adhesive particles have a much higher curing temperature. This required difference in curing temperatures is incompatible with applicant's invention where co-curing of the liquid and solid resin components is required.

In view of the above amendments and remarks, applicant respectfully requests that this application be reexamined and allowed. Although seven new claims have been added, they are all dependent claims and eleven claims have been canceled. Accordingly, the total number of claims remains under twenty and the number of independent claims is under three. Accordingly, no fee for the additional claims appears to be required. However, if it is determined that a fee is due, please charge the fee to Deposit Account No. 082060 in the name of Hexcel Corporation.

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Respectfully submitted,

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